



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,474	08/29/2001	Yasuo Shinohara	Q65911	4884
7590 09/02/2009 SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213				
EXAMINER				
WILLS, MONIQUE M				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
09/02/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

09/940,474

**Applicant(s)**

SHINOHARA ET AL.

**Examiner**

Monique M. Wills

**Art Unit**

1795

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/C)
- Paper No(s)/Mail Date 7/24/09
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Request for Continued Examination*

The request filed on July 24, 2009 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/940,474 is acceptable and a RCE has been established. An action on the RCE follows.

The rejection of claims 1-2, 4-8 & 10-13 under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al., U.S. patent 6,447,958 is overcome. However claims 1-2, 5-8 and 10-13 are newly rejected as follows:

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 6-8 and 10, 12 are rejected under 35 U.S.C. 102(e) as being unpatentable over Tsukuda et al. U.S. Pat. 6, 511,774.

With respect to **claims 1 & 12**, Tsukuda teaches a separator for non-aqueous electrolyte secondary battery, wherein the separator comprises a porous composite base with a shut down layer and heat-resistant layer. See column 9, lines 25-32. The

heat-resistant layer is microporous. See column 5, lines 63-68. A spacer containing an organosilane compound is coated on the porous composite base. See column 50-55. The organosilane layer contains a spacer that comprises a fluorine-containing polymer. See column 14, lines 35-40. The spacer includes particles because the organosilane material is sprayed onto the separator. See column 19, lines 45-50. The limitation with respect to the heat-resistant microporous layer comprising at least one heat-resistant resin selected from resins having a temperature of deflection under a load of 18.6 kg/cm<sup>2</sup> of 100C or more, is considered an inherent property of the prior art set forth. With respect to **claim 2**, the heat-resistant microporous layer consists of heat-resistant resin. See column 8, lines 16-25. With respect to **claim 6**, the limitation concerning the static friction coefficient between the spacer-disposed separator surface and a stainless steel surface ground by a 1000 grit polishing paper s 0.5 or less is considered an inherent characteristic of the prior art set forth. The spacer contains the same fluoropolymer material set forth by Applicant. With respect to **claims 8 & 9**, the spacer is formed by coating an application liquid on the surface of the heat-resistant microporous layer. See column 19, lines 40-45. Further, claims 8 & 9 are process limitations in product claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Therefore, the limitation has been satisfied, because the final products are the same.

With respect to **claim 10**, the separator is for a battery including a non-aqueous electrolyte. See the Abstract.

Therefore, Tsukuda anticipates the instant claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 11 & 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukuda et al. U.S. Pat. 6, 511,774.

Tsukuda teaches a separator for a non-aqueous electrolyte secondary battery as described in the rejection recited hereinabove.

Tsukuda does not expressly disclose that the particle diameter of spacer material is 3 microns or less (claim 5), that the spacer is adjacent the cathode (claim 11) or a spacer thickness from 0.02 to 3 microns (claim 13).

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ small spacer particles of 3 microns or less, in order to increase utilization of the spacer material. The skilled artisan recognize that small particles have larger surface areas. Further, the modification would have been a change in size of the spacer particles. A change in size is generally recognized as

being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With respect to the thickness of the spacer, as minimizing spacer thickness lowers stack weight, volume, and cost of materials, with a concomitant increase in the cell power density. Further, the modification would have been a change in size of the spacer particles. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With respect to placing the spacer adjacent the cathode, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the spacer next to the cathode, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. Tsukuda teaches placing the spacer on the porous base, therefore the spacer is an outer layer and can only face the anode or the cathode.

### ***Response to Arguments***

Applicant's arguments, see page 2, filed July 24, 2009, with respect to U.S. Pat. 6,447,958 have been fully considered and are persuasive. The rejection of Shinohara et al. U.S. Pat. 6,447,958 has been withdrawn.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Monique M Wills/  
Examiner, Art Unit 1795

Application/Control Number: 09/940,474  
Art Unit: 1795

Page 7

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795